

We claim:

1. A folding ladder configured for installation in an opening to provide access between one floor or space and another floor or space, comprising:

an upper ladder section comprising a left ladder rail and a right ladder rail;

5 a lower ladder section comprising a left ladder rail and a right ladder rail;

a hinge rotatably connecting the upper ladder section left ladder rail to the lower ladder section left ladder rail and rotatably connecting the upper ladder section right ladder rail to the lower ladder section right ladder rail;

a plurality of steps rotatably disposed between the upper pair of ladder rails and the lower pair of ladder rails, the plurality of steps configured for rotation between a retracted position and a deployed position,

wherein at least one step in the plurality of steps rotatably disposed between the upper pair of ladder rails and at least one step in the plurality of steps rotatably disposed between the lower pair of ladder rails are linked together by at least one linkage member,

15 wherein said at least one linkage member causes each of said at least one steps to rotate between a retracted position and a deployed position upon rotational movement of said upper ladder section relative to said lower ladder section about said hinge between a closed position and an open position.

20 2. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 1,

wherein said at least one step in the plurality of steps rotatably disposed between the upper pair of ladder rails is linked to the remaining plurality of steps rotatably disposed between the upper pair of ladder rails,

5 wherein said at least one step in the plurality of steps rotatably disposed between the lower pair of ladder rails is linked to the remaining plurality of steps rotatably disposed between the lower pair of ladder rails.

3. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 2,

10 wherein rotation of said at least one step in the plurality of steps rotatably disposed between the upper pair of ladder rails and said at least one step in the plurality of steps rotatably disposed between the lower pair of ladder rails causes a corresponding rotation of a respective one of said remaining plurality of steps rotatably disposed between the upper pair of ladder rails and said remaining plurality of steps rotatably disposed between the lower pair of ladder rails.

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4. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 3,

wherein said rotation of said at least one step in the plurality of steps rotatably disposed between the upper pair of ladder rails and said at least one step in the plurality of steps rotatably  
20 disposed between the lower pair of ladder rails is caused by said at least one linkage member upon rotational movement of said upper ladder section relative to said lower ladder section.

5. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 1, wherein said hinge is a locking hinge configured to lock in at least one position including a fully deployed position of the foldable ladder.

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6. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 1, wherein said hinge is configured to provide increased resistance to opening or closing at at least one angle along an arc traveled by the ladder including a fully deployed position of the foldable ladder.

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7. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 1, wherein in said retracted position the steps are positioned so that a front edge of the steps do not extend appreciably beyond a front edge of said ladder rails and a rear edge of the steps do not extend appreciably beyond a rear edge of said ladder rails.

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8. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 7, wherein in said deployed position the steps are positioned in a substantially horizontal position.

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9. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 1, wherein said at least one linkage member comprises:

a first bracket disposed on said upper ladder section right ladder rail;  
a second bracket disposed on said lower ladder section left ladder rail;  
a first linkage member connecting the first bracket to a topmost step in the lower ladder section; and

5 a second linkage member connecting the second bracket to a lowermost step in the upper ladder section.

10. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 2, further comprising:

10 a third linkage member connecting the second bracket and a step in the lower ladder section.

11. A foldable ladder configured for installation in an opening to provide access between one floor or space and another floor or space according to claim 9, further comprising:

15 a third linkage member connecting the second bracket and a topmost step in the lower ladder section.